

REMARKS

Claims 1-31 are pending in this application. Claims 97 and 98 have been added.

Claims 1-31 stand rejected under 35 USC §102 as being anticipated by Agrawal et al. (U.S. Patent No. 6,297,527) ("Agrawal"). The rejection is respectfully traversed.

The claimed invention relates to a capacitor structure with an annealed top conducting layer. As such, independent claim 1 recites a "capacitor for a semiconductor device" comprising "a bottom conducting layer," "a dielectric layer deposited on said bottom conducting layer" and "an oxygen permeable top conducting layer deposited and annealed on said dielectric layer."

Agarwal relates to a capacitor structure with a multilayer electrode. (Abstract). According to Agarwal, "the lower electrode comprises at least two layers – a platinum layer 74 and a platinum-rhodium layer 76 – formed on the protective layer 64." (Col. 5, lines 28-31; Figures 1-2). Agarwal also teaches that the upper electrode 70 "may be a single layer of suitable conductive material . . . or may have a multilayer structure identical to that of the lower electrode, with a platinum layer and a platinum-rhodium layer." (Col. 6, lines 49-54; Figure 2).

Agarwal does not teach or suggest the claimed features of the present invention. Agarwal does not teach or suggest a capacitor comprising "an oxygen permeable top conducting layer . . . annealed on said dielectric layer," as independent claim 1 recites (emphasis added). Agarwal teaches only that the upper electrode 70 "may be a single layer of suitable conductive material such as titanium nitride, tungsten nitride, platinum, or polysilicon, or may have a multilayer structure identical to that of the lower electrode, with a platinum layer and a platinum-rhodium layer." (Col. 6, lines 49-54; Figure 2). Agarwal, however, is silent about an *annealed* upper electrode, as recited by independent claim 1.

Applicants note that the feature "an oxygen permeable top conducting layer . . . *annealed* on said dielectric layer" as recited in independent claim 1 is a structural, and not

a product-by-process, limitation. For example, in Hazani v. U.S. Int'l Trade Comm'n, which involved patent claims to a memory cell comprising a conductive plate having a surface that was "chemically engraved," the Federal Circuit held that the claims were "pure product claims" and not product-by-process claims. Hazani v. U.S. Int'l Trade Comm'n, 126 F.3d 1473, 44 USPQ2d 1358 (Fed. Cir. 1997). The Federal Circuit reasoned that the "chemically engraved" limitation, read in context, described the product more by its structure rather than by the process used to obtain it. Id.

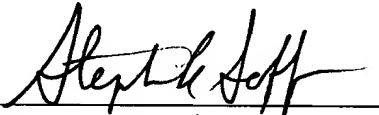
In the present case, the limitation "an oxygen permeable top conducting layer . . . *annealed* on said dielectric layer" of independent claim 1 is a structural limitation and not a product-by-process limitation. In view of Hazani, independent claim 1 is a "pure product claim" which describes the capacitor more by its structure (i.e. a capacitor structure with an *annealed* top conducting layer) rather than by the process to obtain it. Accordingly, the limitations of claims 1-31 are not described in Agarwal, and the claimed invention is not anticipated by Agarwal.

New claims 97 and 98 have been added to round out the scope of protection sought in the present application. The cited reference fails to teach or suggest the subject matter of these claims, including "a capacitor for a semiconductor device" comprising "a tungsten nitride bottom layer; a tantalum pentoxide layer over said tungsten nitride bottom layer; and an annealed platinum layer over said dielectric layer," as recited in newly added independent claim 97. The cited reference also fails to teach or suggest a capacitor comprising "a bottom conducting layer; a dielectric layer over said bottom conducting layer; and an annealed top conducting layer over said dielectric layer, wherein each of said bottom and annealed top conducting layers is formed of a material selected from the group consisting of platinum, platinum rhodium, platinum iridium, and tungsten nitride," as recited in newly added independent claim 98.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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